

WHAT IS CLAIMED IS:

1. A method for preserving living cellular material, comprising:
incubation of the cellular material in a culture medium containing at least one sugar for at least three hours; and
after said incubation, subjecting the cellular material to a preservation protocol.
2. The method of claim 1, wherein said cellular material is a cell culture.
3. The method of claim 1, wherein said cellular material is a natural or man-made tissue or organ.
4. The method of claim 1, wherein said at least one sugar is a polysaccharide.
5. The method of claim 4, wherein said at least one sugar is a disaccharide or trisaccharide.
6. The method of claim 1, wherein said at least one sugar is selected from the group consisting of trehalose, sucrose and raffinose.
7. The method of claim 1, wherein said cellular material is incubated in said culture medium containing at least one sugar for from 3 to 120 hours.
8. The method of claim 1, wherein said cellular material is incubated in said culture medium containing at least one sugar for at least 6 hours.
9. The method of claim 1, wherein said cellular material is incubated in said culture medium containing at least one sugar for at least 12 hours.
10. The method of claim 1, wherein said cellular material is incubated in said culture medium containing at least one sugar for at least 18 hours.
11. The method of claim 1, wherein said cellular material is incubated in said culture medium containing at least one sugar for at least 24 hours.
12. The method of claim 1, wherein said cellular material is incubated in said culture medium containing at least one sugar for at least 48 hours.
13. The method of claim 1, wherein said cellular material is incubated in said culture medium containing at least one sugar for at least 72 hours.
14. The method of claim 1, wherein said cellular material is incubated in said culture medium containing at least one sugar for at least 96 hours.
15. The method of claim 1, wherein said preservation protocol comprises at least one of cooling the cellular material and drying the cellular material.
16. The method of claim 15, wherein said preservation protocol is selected from the group consisting of freezing, vitrification, freeze-drying and desiccation.

17. The method of claim 1, wherein said preservation protocol comprises cooling the cellular material in said culture medium containing at least one sugar.

18. The method of claim 17, wherein additional cryoprotectant is added to said culture medium prior to cooling.

19. The method of claim 18, wherein said cryoprotectant includes at least one sugar.

20. The method of claim 18, wherein said cryoprotectant is selected from the group consisting of acetamide, agarose, alginate, alanine, albumin, ammonium acetate, anti-freeze proteins, butanediol, chondroitin sulfate, chloroform, choline, cyclohexanediols, cyclohexanediones, cyclohexanetriols, dextrans, diethylene glycol, dimethyl acetamide, dimethyl formamide, dimethyl sulfoxide, erythritol, ethanol, ethylene glycol, ethylene glycol monomethyl ether, formamide, glucose, glycerol, glycerophosphate, glyceryl monoacetate, glycine, glycoproteins, hydroxyethyl starch, inositol, lactose, magnesium chloride, magnesium sulfate, maltose, mannitol, mannose, methanol, methoxy propanediol, methyl acetamide, methyl formamide, methyl ureas, methyl glucose, methyl glycerol, phenol, pluronic polyols, polyethylene glycol, polyvinylpyrrolidone, proline, propanediol, pyridine N-oxide, raffinose, ribose, serine, sodium bromide, sodium chloride, sodium iodide, sodium nitrate, sodium nitrite, sodium sulfate, sorbitol, sucrose, trehalose, triethylene glycol, trimethylamine acetate, urea, valine and xylose.

21. The method of claim 1, wherein said culture medium contains from 0.1 to 0.4M sugar.

22. The method of claim 1, wherein said culture medium contains from 0.1 to 0.3M sugar.

23. The method of claim 1, wherein said preservation protocol comprises cooling said cellular material in a cryoprotectant-containing solution.

24. The method of claim 23, wherein said cryoprotectant-containing solution comprises at least one sugar.

25. The method of claim 23, wherein said cryoprotectant-containing solution contains at least one cryoprotectant selected from the group consisting of acetamide, agarose, alginate, alanine, albumin, ammonium acetate, anti-freeze proteins, butanediol, chondroitin sulfate, chloroform, choline, cyclohexanediols, cyclohexanediones, cyclohexanetriols, dextrans, diethylene glycol, dimethyl acetamide, dimethyl formamide, dimethyl sulfoxide, erythritol, ethanol, ethylene glycol, ethylene glycol monomethyl ether, formamide, glucose, glycerol, glycerophosphate, glyceryl monoacetate, glycine, glycoproteins, hydroxyethyl

starch, inositol, lactose, magnesium chloride, magnesium sulfate, maltose, mannitol, mannose, methanol, methoxy propanediol, methyl acetamide, methyl formamide, methyl ureas, methyl glucose, methyl glycerol, phenol, pluronic polyols, polyethylene glycol, polyvinylpyrrolidone, proline, propanediol, pyridine N-oxide, raffinose, ribose, serine, sodium bromide, sodium chloride, sodium iodide, sodium nitrate, sodium nitrite, sodium sulfate, sorbitol, sucrose, trehalose, triethylene glycol, trimethylamine acetate, urea, valine and xylose.

26. The method of claim 23, wherein said cryoprotectant-containing solution contains 0.1 to 2.0M sugar.

27. The method of claim 26, wherein said cryoprotectant-containing solution contains 0.2 to 0.6M sugar.

28. A method for preparing living cellular material for preservation, comprising incubating the cellular material in a culture medium containing at least one polysaccharide for at least three hours.

29. The method of claim 28, wherein said cellular material is a cell culture.

30. The method of claim 28, wherein said cellular material is a natural or man-made tissue or organ.

31. The method of claim 28, wherein said at least one polysaccharide is a disaccharide or trisaccharide.

32. The method of claim 28, wherein said at least one polysaccharide is selected from the group consisting of trehalose, sucrose and raffinose.

33. The method of claim 28, wherein said cellular material is incubated in said culture medium containing at least one polysaccharide for from 3 to 120 hours.

34. The method of claim 28, wherein said culture medium contains from 0.1 to 0.4M polysaccharide.

35. The method of claim 28, wherein said culture medium contains from 0.1 to 0.3M polysaccharide.